



## Metadata Standard

*The goal of the Standards and Recommendations Committee is to provide recommendations and guidelines to Indiana GIS user communities to facilitate the collection, maintenance and analysis of GIS data; and, to communicate existing federal, state and local data standards. The Data Standards and Recommendation Committee will not recommend software, hardware or operating systems. Furthermore, the Data Standards and Recommendation Committee will not impose any of these recommendations and guidelines as a requirement on any GIS user community.*

### **What is Metadata?**

Metadata – *data documentation* – are a critical component of any GIS project, essential for data sharing, and absolutely vital for protecting an organizations investment in data. The major uses of metadata are:

- to help organize and maintain an organizations internal investment in their GIS data,
- to provide information about an organization's data holdings to data catalogs, clearinghouses, and brokerages, and
- to provide information to process and interpret data received through a transfer from an external source.

Metadata document the content and quality of GIS and other geospatial data, such as databases, maps, and documents. Much like an electronic card catalog for books, there are standards for what gets documented, and how to do it. Metadata for GIS documents who created and owns the data, what the data represent, why it was created, where the data represent geographically, when the data were created and the time period they represent, and how the data was created.

By using either of the following recommendations for metadata, you can document your data holdings to protect your data investment, and share metadata with others by posting your metadata to Indiana's Geographic Information Catalog ([http://atlas.ulib.iupui.edu/fgdc\\_node/](http://atlas.ulib.iupui.edu/fgdc_node/)). The metadata standards listed below do not specify what software to use to develop your metadata – there are several free and commercial software packages available to assist you in metadata development. The

Indiana GIS Initiative Metadata Toolkit ([www.state.in.us/ingisi/](http://www.state.in.us/ingisi/)) can provide on-line resources to assist in this process.

## ***Recommendation***

The Federal Geographic Data Committee (FGDC) has adopted a standard for metadata called the Content Standard for Digital Geospatial Metadata. The Indiana Geographic Information Council has developed a two-tier recommendation based on users ability to conform with the federal standard.

## ***What is the difference between Tier One and Tier Two?***

### **Tier One**

The first tier recommendation for metadata is to develop fully FGDC compliant metadata by completing all of the “mandatory” and “mandatory if applicable” sections of the Content Standard for Digital Geospatial Metadata (<http://www.fgdc.gov/metadata/contstan.html>). This is strongly recommended by the Indiana Geographic Information Council and **may be necessary if you must comply with federal metadata standards.**

### **OBJECTIVES:**

The objectives of the standard are to provide a common set of terminology and definitions for the documentation of digital geospatial data.

### **SCOPE:**

Executive Order 12906, "Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure," was signed on April 11, 1994, by President William Clinton. Section 3, Development of a National Geospatial Data Clearinghouse, paragraph (b) states: "Standardized Documentation of Data, ... each agency shall document all new geospatial data it collects or produces, either directly or indirectly, using the standard under development by the FGDC, and make that standardized documentation electronically accessible to the Clearinghouse network." This standard is the data documentation standard referenced in the executive order.

The standard was developed from the perspective of defining the information required by a prospective user to determine the availability of a set of geospatial data, to determine the fitness the set of geospatial data for an intended use, to determine the means of accessing the set of geospatial data, and to successfully transfer the set of geospatial data. As such, the standard establishes the names of data elements and compound elements to be used for these purposes, the definitions of these data elements and compound elements, and information about the values that are to be provided for the data elements. The standard does not specify the means by which this information is organized in a computer system or in a data transfer, nor the means by which this information is transmitted, communicated, or presented to the user.

In addition to use by the Federal Government, the FGDC invites and encourages organizations and persons from State, local, and tribal governments, the private sector, and non-profit organizations to use the standard to document their geospatial data.

## **Tier Two**

The Indiana Geographic Information Council recognizes that in some instances resources of State, local, and tribal governments, the private sector, and non-profit organizations may be limited such that full documentation is not possible. In such cases, the Indiana Metadata Profile (Attachment A) is a second tier recommendation for metadata development. The Indiana Metadata Profile is minimally compliant with the FGDC Content Standard for Digital Geospatial Metadata, and additionally includes information from the standard relevant to Indiana users, such as distribution information.

Please note that while both tiers of metadata meet at least the minimum requirements for the Content Standard for Digital Geospatial Metadata, the Indiana Geographic Information Council encourages the use of the Tier One metadata recommendation.

## ***Examples***

Tier One (Attachment B)

Tier Two (Attachment C)

# Appendix A: Indiana GIS Metadata Profile

☺ THE INDIANA GEOGRAPHIC INFORMATION COUNCIL RECOMMENDS FULLY COMPLIANT METADATA in accordance to the FGDC Content Standard for Digital Geospatial Metadata. The Indiana GIS Metadata Profile provides guidance for users who cannot otherwise develop fully compliant metadata. For more examples, you can preview the Indiana GIS Initiative Metadata Tool Kit ([www.state.in.us/ingisi](http://www.state.in.us/ingisi)) for instructions on completing fully compliant metadata. Contact Jill Saligoe-Simmel regarding training opportunities 317-920-9150 ([jsaligoe@iupui.edu](mailto:jsaligoe@iupui.edu)).

☺ DON'T BE OVERWHELMED BY THIS WORKSHEET: The point is to get you started with documenting your data set.

☺ THIS WORKSHEET REPRESENTS SOME BARE-BONES INFORMATION needed to produce a sharable/searchable/retrievable metadata catalog entry. If you wish to document more information about your data set(s), please make a note of it – I can almost guarantee there's a place for it in the fully-compliant metadata.

☺ THIS IS ONLY A WORKSHEET: the information you provide here can be transferred to an FGDC computer format at a later date.

<i>Name of an organization or individual that developed the data set</i>	
8.1 Originator of the data set: <input type="checkbox"/> Unknown <i>or</i> _____	
<i>Free date</i>	
8.2 Publication Date: <input type="checkbox"/> Unknown <input type="checkbox"/> Unpublished <i>or</i> _____	
<i>The name by which the data set is known</i>	
8.4 Title: _____	
8.6 Geodata Presentation Form: <input type="checkbox"/> Atlas <input type="checkbox"/> Audio <input type="checkbox"/> Database <input type="checkbox"/> Diagram <input type="checkbox"/> Document <input type="checkbox"/> Globe <input type="checkbox"/> Graph <input type="checkbox"/> Image <input type="checkbox"/> Map <input type="checkbox"/> Model <input type="checkbox"/> Multimedia presentation <input type="checkbox"/> Profile <input type="checkbox"/> Remote-sensing image <input type="checkbox"/> Section <input type="checkbox"/> Spreadsheet <input type="checkbox"/> Table <input type="checkbox"/> Video <input type="checkbox"/> View <input type="checkbox"/> Other _____	
<i>Use a URL to hyperlink to a data set for Internet download, or link to your organizations web page, if applicable</i>	
8.7 Online linkage: _____	
<i>A brief narrative summary of the data set</i>	
1.2.1 Abstract: _____	
<i>A summary of the intentions with which the data set was developed</i>	
1.2.2 Purpose: <input type="checkbox"/> Not Applicable <input type="checkbox"/> Unknown <i>or</i> _____	
<i>Single date/time OR multiple dates/times OR range of dates/times</i>	
1.3 Time period of content: _____	1.4.1 Progress: <input type="checkbox"/> Complete <input type="checkbox"/> In work <input type="checkbox"/> Planned
<i>"Ground condition" is used for primary data sources such as air photos, field collected data and remote sensing; "Publication date" is used for secondary sources of data</i>	
1.3.1 Currency of the data: <input type="checkbox"/> Ground Condition <input type="checkbox"/> Publication Date	
1.4.2 Maintenance and update frequency: <input type="checkbox"/> Continually <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually <input type="checkbox"/> Unknown <input type="checkbox"/> As Needed <input type="checkbox"/> Irregular <input type="checkbox"/> None Planned	
1.5 Spatial extent of the data set: <i>Expressed by latitude and longitude values</i>	
West Bounding Coordinate _____ <i>or</i> <input type="checkbox"/> <u>-88.25</u> <i>-180.0 &lt;= West Bounding Coordinate &lt; 180.0 Indiana</i>	1.6.1.1 Theme keyword thesaurus: <input type="checkbox"/> None <i>or</i> _____
East Bounding Coordinate _____ <i>or</i> <input type="checkbox"/> <u>-84.56</u> <i>-180.0 &lt;= East Bounding Coordinate &lt;= 180.0 Indiana</i>	1.6.1.2 Theme keywords: _____ _____ _____
North Bounding Coordinate _____ <i>or</i> <input type="checkbox"/> <u>41.92</u> <i>-90.0 &lt;= North Bounding Coordinate &lt;= 90.0 Indiana</i>	
South Bounding Coordinate _____ <i>or</i> <input type="checkbox"/> <u>37.59</u> <i>-90.0 &lt;= South Bounding Coordinate &lt;= 90.0 Indiana</i>	
<i>Restrictions and legal prerequisites for accessing the data set. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the data set.</i>	
1.7 Access Constraints: <input type="checkbox"/> None <i>or</i> _____	

<i>Restrictions and legal prerequisites for using the data set after access is granted. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the data set.</i> 1.8 Use Constraints: <input type="checkbox"/> None or _____	
<i>The denominator of the representative fraction on a map (for example, on a 1:24,000-scale map, the Source Scale Denominator is 24000)</i> 2.5.1.2 Source Scale: <input type="checkbox"/> Not Applicable <input type="checkbox"/> Unknown <input type="checkbox"/> 1:_____	
<i>The estimate of the accuracy of the horizontal coordinate measurements expressed in (ground) meters</i> 2.4.1.2.1 Horizontal Positional Accuracy Value: <input type="checkbox"/> Not Applicable <input type="checkbox"/> Unknown <input type="checkbox"/> _____	<i>An estimate of the accuracy of the vertical coordinate measurements in the data set expressed in (ground) meters</i> 2.4.2.2.1 Vertical Positional Accuracy Value: <input type="checkbox"/> Not Applicable <input type="checkbox"/> Unknown <input type="checkbox"/> _____
4.1.4.1 Horizontal Datum Name: <input type="checkbox"/> Not Applicable <input type="checkbox"/> Unknown <input type="checkbox"/> North American Datum of 1927 (NAD27) <input type="checkbox"/> North American Datum of 1983 (NAD83)	4.2.1.1 Altitude (vertical) Datum Name: <input type="checkbox"/> Not Applicable <input type="checkbox"/> Unknown <input type="checkbox"/> National Geodetic Vertical Datum of 1929 (NGVD29) <input type="checkbox"/> North American Vertical Datum of 1988 (NAVD88)
<i>For maps, what map projection or grid coordinate system are you using?</i> 4.1.1.1 Map Projection Name: _____	
5.1.1.1 Entity Type: <input type="checkbox"/> Point <input type="checkbox"/> Line <input type="checkbox"/> Polygon <input type="checkbox"/> Raster <input type="checkbox"/> Route <input type="checkbox"/> Grid <input type="checkbox"/> Other _____	
<div style="display: flex; justify-content: space-between;"> <span><i>Contact person name AND/OR Organization</i></span> <span><i>Position (if applicable)</i></span> </div>	
6.1 Distributor:	
<i>Street</i>	<i>City</i>
<i>State</i>	<i>Zip code</i>
<i>Phone</i>	<i>Fax (if applicable)</i>
<i>E-mail (if applicable)</i>	
6.3 Distribution Liability: <input type="checkbox"/> None or _____	
<i>In what formats are the data available? The format version is important to the user (eg., ArcInfor v. 7.0.4 export). Note more information can be provided with more complete metadata.</i> 6.4.2.1.1 Digital Form -- Format Name: _____	<i>Are the data available for free or is there an associated cost?</i> 6.4.3 Fees: <input type="checkbox"/> None or _____
<i>The date that the metadata were created or last updated</i> 7.1 Metadata Date: _____	
<div style="display: flex; justify-content: space-between;"> <span><i>Contact person name AND/OR Organization</i></span> <span><i>Position (if applicable)</i></span> </div>	
7.4 Metadata Contact:	
<i>Street</i>	<i>City</i>
<i>State</i>	<i>Zip code</i>
<i>Phone</i>	<i>Fax (if applicable)</i>
<i>E-mail (if applicable)</i>	
7.5 Metadata Standard: <b><u>FGDC Content Standard for Digital Geospatial Metadata</u></b>	7.6 Metadata Standard Version: <b><u>2.0</u></b>